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10/525,134	02/16/2005	Adrianus Sempel	NL 020757	1961

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EXAMINER
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KARIMI, PEGEMAN

ART UNIT	PAPER NUMBER
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2629

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01/23/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/525,134	Applicant(s) SEMPEL, ADRIANUS	
	Examiner Pegeman Karimi	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11/08/2007.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-12, and 14-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed on 11/08/2007 has been entered and considered by examiner.

### *Claim Objections*

2. Claim 15 is objected to because of the following informalities: On line 2 of this claim the meaning of the sentence "... wherein the detecting the open output ..." is not clear and it is understood to be "... wherein the means for detecting the open output ..."

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 10-12, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Karube (U.S. Patent No. 6,456,282).

**As to claim 1**, Karube discloses a display device (Fig. 3) comprising:

a number of picture elements (pixel array portion 2); and

a display driver device (3) comprising driving transistors (11) to be connected in series with the picture elements (circuit 11 is connected from one side to signal line drive circuit 3 and the other side to the pixel element);

means (12 and 11) for monitoring output voltages at output nodes (voltage at node d at the output of element 11 in Fig. 7) of the display driver device (col. 5, lines 41-46, and col. 6, lines 51-59);

a feedback mechanism (Feedback mechanism of Fig. 11) configured to control a reference voltage of the display driver device (the reference voltage of supply line S at node e) and to maintain substantially constant a voltage value between a supply node (supply node e) and the output nodes (output node of a, where the voltage  $V_{in}$  is outputted from a video signal input voltage), (As can be seen in Fig. 12, when the feedback switch 12 turns off along with switch 10, the voltage value between nodes e and a becomes constant because the two voltage values in stable period become the same); and

means (12 and 11) for detecting an open output of the display driver device (SW10 is in off position) to the picture elements (S) and for interrupting the feedback mechanism (feedback mechanism of switch 12 between the nodes b and c) upon detection of the open output (when the SW 10 is off the SW 12 turns off and the feedback between the nodes c and b is interrupted).

**As to claim 17**, this claim differs from claim 1, only in that the limitation "the detector includes a feedback" is additionally recited. Karube teaches the detector (12)

includes a feedback ((control circuit, 12, includes a load drive circuit, which contains a feedback section with a switch SW12).

**As to claims 2 and 11**, Karube teaches means (12) for signaling (col. 6, lines 51-53) when an output voltage reaches a threshold voltage (col. 8, lines 21-25 and lines 36-43).

**As to claim 3**, Karube teaches fusing means (SW1 and SW2) between the driving transistors (INV1, INV2, and INV3) and the picture elements (2).

**As to claim 10**, this claim differs from claim 1 only on that the limitation "the display driver device comprising a differential amplifier for detecting an open output of the display driver device for a picture element" is additionally recited. Karube teaches the display driver device (3) comprising a detector (12) including a differential amplifier (OP1) for detecting an open output (SW10 is in off position) of the display driver device for a picture element (S), (in sampling period switch control detects switches 10-13 and sets switches 11 and 13 to open and switches 10 and 12 are closed and the voltage of the input signal is fed to OP1 and since switches 11 and 13 are closed the output voltage is fed-back to the inverting input terminal), (col. 14, lines 44-47).

**As to claim 12**, this claim differs from claim 3 only in that the limitation "an output connection of the display driver device" is additionally recited. Karube teaches an output

connection of the display driver device (pixel array portion, 2, is connected to display driver device element 3 via output scan lines S1-Sn).

**As to claim 18**, Karube teaches a switch connected (SW12) between the supply node (node e) and an output node (node b is the output node for capacitor C10), wherein the detector is further configured to open the switch upon detection of the open output (Switch SW12 opens (turns off) when switch SW10 opens (turns off)).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-7, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karube in view of Sakamoto (U.S. Patent No. 5,594,463).

**As to claims 5 and 14**, Karube teaches the feedback mechanism (feedback mechanism of Fig. 11). Karube does not mention signaling a difference between an output voltage and a reference voltage. Sakamoto teaches a control circuit (source voltage controller) for signaling (Display message, S118, Fig. 7) a difference between (difference between = estimated voltage drop of  $\Delta V$ ) an output voltage (output voltage

=  $V_f$ ) of the display driver device for a picture element (pixels) and the reference voltage ( $V_d$ ) being below a threshold voltage ( $V_d$ , S114), (A voltage drop is estimated in Step 110 and a voltage drop  $V_f$  is calculated and a minimum necessary driving voltage  $V_d$  is estimated, which is interpreted as a reference voltage value and based on comparing to a  $V_d$  voltage if the value is less than  $V_d$  a signal of step 118 is displayed). Therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the signaling a difference between an output voltage and a reference voltage of Sakamoto to the feedback mechanism of Karube because to provide a driving circuit for a display apparatus and a method of driving the display apparatus, which can obtain an appropriate lighting condition of the EL element after it is used for a long time, and, at the same time, which can save the consumption energy even in the initial condition of the usage of the EL element.

**As to claims 6 and 15**, Karube teaches the means (12 and 11) for detecting the open output (SW10 is in off position) are configured to perform the detecting after the signaling (At the sampling period, load drive circuit detects switches 10 and 12 are on and switches 11 and 13 are off. It then enter writing and stable periods where it turns switches 10 and 12 off and switches 11 and 13 on and adjusts the voltage at node e).

**As to claim 7**, Karube teaches the means (12 and 11) for detecting includes a differential amplifier (Fig. 11, OP1; col. 13, lines 63-65).

**As to claim 16**, Karube teaches (Fig. 11) a switch in the current path (SW13) between the reference voltage and an output of the display driver device (switch SW13 is located between the nodes e and a).

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karube in view of Miyazawa (U.S. Pub. No. 2003/0160247).

**As to claim 9**, Karube does not teach the luminescent element. Miyazawa (Fig. 1) teaches the picture elements includes a luminescent element (3) having a luminescence determined by a first current ([0038], lines 9-17). therefore it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have added the luminescent element of Miyazawa in Karube's display device because electroluminescent elements can operate at low voltage and have an angle-dependent visibility lower than that of liquid crystal elements ([0015]).

**As to claim 8**, Karube teaches the feedback mechanism is configured for keeping substantially constant a difference between an output voltage of the display driver device (output voltage is at the node between SW13 and OP1, wherein when the SW13 is closed the node voltage value equals to voltage value of node e) for a picture element and the reference voltage (reference voltage is equal to voltage value of node



e), (since the voltage value of reference voltage and output voltage are equal the difference is zero, which is a substantial constant value).

Karube does not teach current sources, Miyazawa teaches the picture elements (23) are configured to be driven by current sources ([0038], lines 9-15).

### ***Response to Arguments***

8. Applicant's arguments, see pages 10 and 11, filed on 11/08/2007, with respect to rejection(s) of claim 1 under 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of new reference of Sakamoto (U.S. Patent No. 5,594,463).

Applicant argues that Karube does not teach or suggest "means for detecting an open output of the display driver device to the picture elements and for interrupting the feedback mechanism upon detection of the open output".

Karube teaches means (12 and 11) for detecting an open output of the display driver device (SW10 is in off position) to the picture elements (S) and for interrupting the feedback mechanism (feedback mechanism of switch 12 between the nodes b and c) upon detection of the open output (when the switch SW 10 is in off position the switch SW 12 turns off and the feedback between the nodes c and b is interrupted).


***Inquires***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pegeman Karimi whose telephone number is (571) 270-1712. The examiner can normally be reached on Monday-Thursday 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pegeman Karimi  
01/12/2008

  
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SUPERVISORY PATENT EXAMINER